

What is claimed is:

1. An OFDM transmission apparatus comprising:
multiplier for multiplying same important
5 information used for communication control by at least
two carrier frequency signals to generate an OFDM signal;
and

transmitter for transmitting the generated OFDM
signal.

10 2. The OFDM transmission apparatus according to
claim 1, wherein said multiplier uses a carrier frequency
signal of angular frequency 0 as the carrier frequency
signal by which the important information is multiplied.

3. The OFDM transmission apparatus according to
15 claim 1, wherein the important information is a specific
packet signal.

4. An OFDM reception apparatus comprising:
receiver for receiving an OFDM signal with same
important information used for communication control
20 multiplied by at least two carrier frequency signals;
extractor for extracting the important information
from a reception signal; and

determiner for comparing the reception level of
subcarriers by which important information is multiplied
25 and determining, of the extracted important information,
the important information carried by the subcarrier with
the higher reception level as the important information

5. The OFDM reception apparatus according to claim 4, wherein said receiver for receives an OFDM signal including a first subcarrier made up of important information multiplied by a carrier frequency signal of angular frequency 0 and a second subcarrier made up of the important information multiplied by a carrier frequency signal with an arbitrary angular frequency, and

the determiner for compares the reception level of the first subcarrier and that of the second subcarrier and determines, of the important information extracted by said extractor, the important information carried by the subcarrier with the higher reception level as the important information of the reception signal.

6. The OFDM reception apparatus according to claim 5, wherein said determiner comprises averager for averaging the reception level of the first subcarrier and the reception level of the second subcarrier.

7. The OFDM reception apparatus according to claim 5, wherein said determiner comprising:

first determiner for comparing/determining the reception level of the first subcarrier and the reception level of the second subcarrier; and

second determiner for determining whether the difference in the reception level between the first subcarrier and the second subcarrier is larger or smaller

than a predetermined value,

wherein said determiner determines the important information carried by the second subcarrier as the important information carried by the subcarrier with the higher reception level, if the difference is smaller than the predetermined value.

8. The OFDM reception apparatus according to claim 5, wherein said determiner compares the determination error of the first subcarrier and the determination error of the second subcarrier and determines, of the important information extracted by the extractor, the important information carried by the subcarrier with the smaller determination error as the important information of the reception signal.

9. The OFDM reception apparatus according to claim 5, wherein said extractor comprising:

DC offset detector for adding up reception signals of the first subcarrier subjected to Fourier transform processing for every unit time and averaging the reception signals for an arbitrary multiple of the unit time to detect a DC offset;

storer for successively storing the detected DC offset; and

subtractor for subtracting an arbitrary DC offset read from said storer from the reception signal of the first subcarrier before synchronization detection processing.

10. The OFDM reception apparatus according to claim
9, wherein said determiner comprises combiner for adding
up the important information carried by the first
subcarrier and the important information carried by the
5 second subcarrier.

11. The OFDM reception apparatus according to claim
9, wherein said determiner comprises maximum-ratio
combiner for carrying out weighting processing on the
important information carried by the first subcarrier
10 and the important information carried by the second
subcarrier according to the reception level of each
subcarrier and adding up the weighting-processed
important information.

12. The OFDM reception apparatus according to claim
15 4, wherein the important information is a specific packet
signal.

13. A communication terminal apparatus comprising
an OFDM transmission apparatus, said OFDM transmission
apparatus comprising:

20 multiplier for multiplying same important
information used for communication control by at least
two carrier frequency signals to generate an OFDM signal;
and

transmitter for transmitting the generated OFDM
25 signal.

14. A communication terminal apparatus comprising
an OFDM reception apparatus, said OFDM reception

receiver for receiving an OFDM signal with same important information used for communication control multiplied by at least two carrier frequency signals;

determiner for comparing the reception level of subcarriers by which important information is multiplied and determining, of the extracted important information, the important information carried by the subcarrier with the higher reception level as the important information of the reception signal.

multiplier for multiplying same important information used for communication control by at least two carrier frequency signals to generate an OFDM signal; and

16. A base station apparatus comprising an OFDM reception apparatus, said OFDM reception apparatus comprising:

25 receiver for receiving an OFDM signal with same
important information used for communication control
multiplied by at least two carrier frequency signals;

extractor for extracting the important information from a reception signal; and

determiner for comparing the reception level of subcarriers by which important information is multiplied and determining, of the extracted important information, the important information carried by the subcarrier with the higher reception level as the important information of the reception signal.

17. An OFDM transmission method comprising:

10 the multiplying step of multiplying same important information used for communication control by at least two carrier frequency signals to generate an OFDM signal; and

the transmitting step of transmitting the generated OFDM signal.

18. The OFDM transmission method according to claim 17, wherein said multiplying step uses a carrier frequency signal of angular frequency 0 as the carrier frequency signal by which the important information is multiplied.

19. The OFDM transmission method according to claim 17, wherein the important information is a specific packet signal.

20. An OFDM reception method comprising:

25 the receiving step of receiving an OFDM signal with same important information used for communication control multiplied by at least two carrier frequency

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signals;

the extracting step of extracting the important information from a reception signal; and

the determining step of comparing the reception
5 level of subcarriers by which important information is multiplied and determining, of the extracted important information, the important information carried by the subcarrier with the higher reception level as the important information of the reception signal.

10 21. The OFDM reception method according to claim 20, wherein said receiving step receives an OFDM signal including a first subcarrier made up of important information multiplied by a carrier frequency signal of angular frequency 0 and a second subcarrier made up of
15 the important information multiplied by a carrier frequency signal with an arbitrary angular frequency, and

said determining step compares the reception level of the first subcarrier and that of the second subcarrier
20 and determines, of the important information extracted by said extractor, the important information carried by the subcarrier with the higher reception level as the important information of the reception signal.